Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Section: \_\_\_\_\_\_\_\_\_

**SBI3U: Unit Test**

**Animal Structures and Functions**

**K/U: /46 A: /24 TOTAL: /70= \_\_\_\_\_\_\_%**

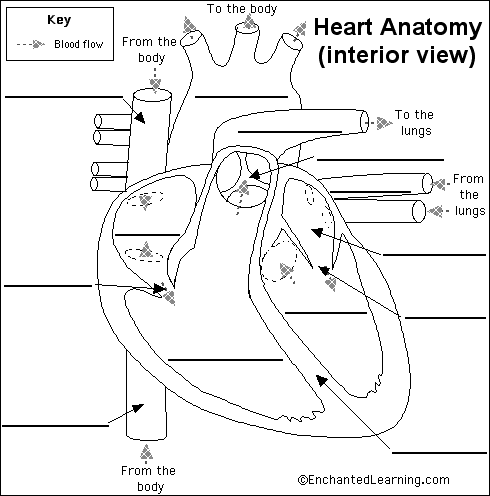
**MULTIPLE CHOICE QUESTIONS: 1 mark each = 15 marks total(Knowledge/Understanding)**

1. The circulatory system is comprised of:
   1. The heart, blood, alveoli, lymphatic vessels
   2. The heart, vein, blood, lymphatic vessels
   3. The heart, veins, arteries, capillaries, blood
   4. The heart, veins, arteries, alveoli, blood
2. Oxygenated blood coming from the lungs enters the heart through the \_\_\_\_\_, into the \_\_\_\_\_\_ then the \_\_\_\_\_\_\_ before being distributed to the rest of the body through the \_\_\_\_\_\_:
   1. Pulmonary veins, left atrium, left ventricle, aorta
   2. Pulmonary artery, left atrium, left ventricle, vena cava
   3. Pulmonary artery, left atrium, left ventricle, aorta
   4. Pulmonary veins, right atrium, right ventricle, aorta
3. What links the arteries to the veins?
   1. Aorta
   2. Heart
   3. Muscle
   4. Capillaries
4. Pulse is a direct measure of
   1. Blood pressure
   2. Cardiac output
   3. Heart rate
   4. Breathing rate
5. Circulation provides your heart with
   1. Oxygen
   2. A way to get rid of waste
   3. Nutrients
   4. All of the above
6. Which of the following gives the correct order for food as it passes through the organs of the digestive system?
7. mouth, epiglottis, liver, stomach, pancreas, small intestine, large intestine, anus
8. mouth, pharynx, esophagus, stomach, small intestine, large intestine, anus
9. mouth, esophagus, stomach, gallbladder, pancreas, large intestine, small intestine, anus
10. esophagus, epiglottis, stomach, liver, small intestine, large intestine, anus
11. Which of the following best describes the role of the esophagus in digestion?

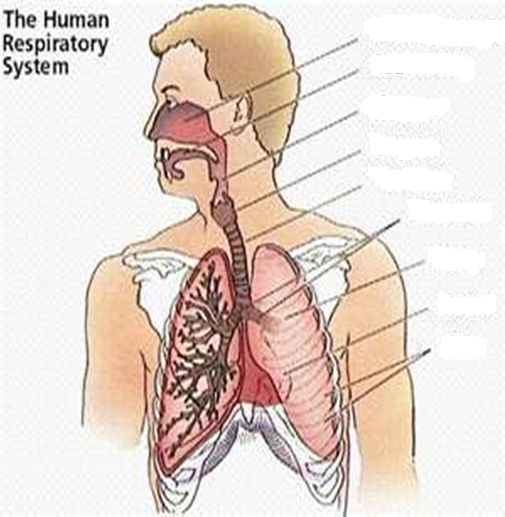
1. Connects the mouth to the stomach and has no function in chemical digestion
2. Serves a minor role in the chemical digestion of fats
3. Mucous is secreted to protect the esophagus from the stomach enzymes
4. Digestive enzymes are secreted as food passes from the esophagus to the stomach
5. Although the stomach contents are very acidic, the stomach usually does not cause damage to itself. Why?
6. The release of gastric juices is controlled to avoid too high a concentration
7. Food and water dilute the gastric juices
8. The stomach lining is quick to repair itself
9. Mucus forms a thick protective coating for the stomach
10. All of the above are correct
11. The primary function of the small intestine is to:
12. pass indigestible waste from the body
13. maintain constant levels of nutrients in the blood
14. kill bacteria in the food
15. digest and absorb nutrients
16. Which of the following is NOT a function of the liver?
17. digest food as it passes through the liver on the way to the large intestine
18. monitor glucose levels in the blood
19. convert by-products of protein digestion to urea
20. aid in digestion by producing bile
21. Respiration actually is the process of:
22. Sucking air into lungs
23. Converting sugar into ATP by tissue cells
24. Exhaling air out of lungs
25. Gas exchange between two or more body compartments.
26. Gas exchange that takes place between the blood in the systemic capillaries and the fluid in the tissue cells:
27. Hyperventilation
28. External Respiration
29. Internal Respiration
30. Acid base balance.
31. A key linkage between CO2 and blood acidity is the :
32. Carrying of oxygen by haemoglobin
33. Release of nitrogen from tissue cells during metabolism
34. Combination of carbon dioxide with H2O in thousands of erythrocytes
35. Activation of acid- forming enzymes within blood leukocytes.
36. Each alveolus in the lungs is covered by tiny blood vessels to perform which of these functions?
37. Excretion of urine
38. Gas exchange
39. Blood production
40. Enzymatic digestion
41. During gas exchange in respiration which of the following occurs?
42. Oxygen is flowing from a low concentration inside the cell to a high concentration outside the cell
43. Oxygen flows from higher concentration in the blood to the lower concentration in the body cell
44. Carbon dioxide is absorbed from the red blood cells into the body cells.
45. Carbon dioxide diffuses from low concentration outside the cell to the high concentration inside the cell.

**DIAGRAMS: 27 marks**

1. Using a diagram, explain how peristalsis and rhythmical segmentation work. (Knowledge/Understanding: 5 marks)
2. Label the following diagram. (Knowledge/Understanding: 13 marks)



1. Label the following diagram. (Knowledge/Understanding: 9 marks)



**SHORT ANSWER QUESTIONS: 14 marks**

1. Some babies are born with a hole between their left and right ventricles. Explain how, if not surgically corrected, this hole would affect the oxygen content of the blood entering the body. (Application: 2 marks)
2. A student has placed the enzyme lipase in a test tube along with a solution of hydrochloric acid and a protein. Explain why digestion will or will not take place. (Application: 4 marks)
3. What is the difference between gas exchange and cell respiration? (Application: 4 marks)
4. Explain how sensory impulses are involved in changing the rhythm of breathing? (Knowledge/Understanding: 4 marks)

**LONG ANSWER QUESTIONS: 14 marks**

1. Hundreds of studies have linked smoking with cardiovascular and lung disease. Antismoking and health groups have proposed that cigarette advertisement in all media should be banned entirely. What are some arguments in favour of this? What are some arguments in opposition of this? What is your position on such a ban and why? (Application: 6 marks)
2. Cirrhosis of the liver is a serious disease. As a Public Relations employee at the Canadian Liver Foundation, you have been asked to prepare a campaign to notify the public about this disease. In the space below, educate the public on:
3. The environmental and/or lifestyle choices that can put someone at risk for this condition. (Application: 4 marks)
4. How Cirrhosis would affect a person’s health. (Application: 4 marks)

**Unit Test – ANSWERS**

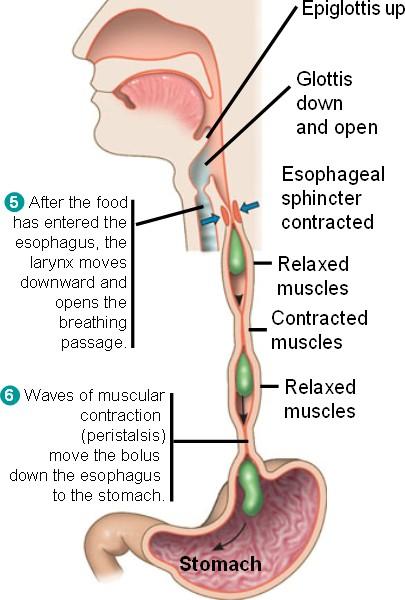
**Animal Structures and Functions**

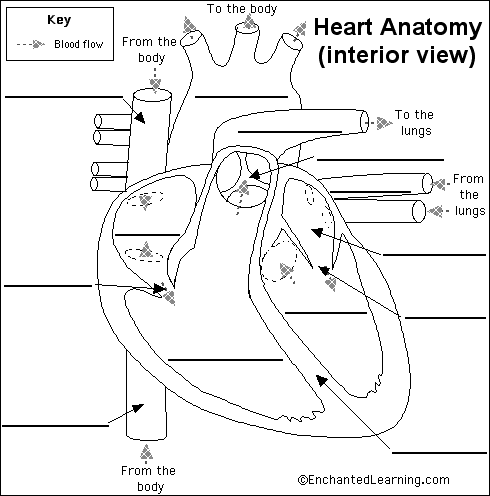
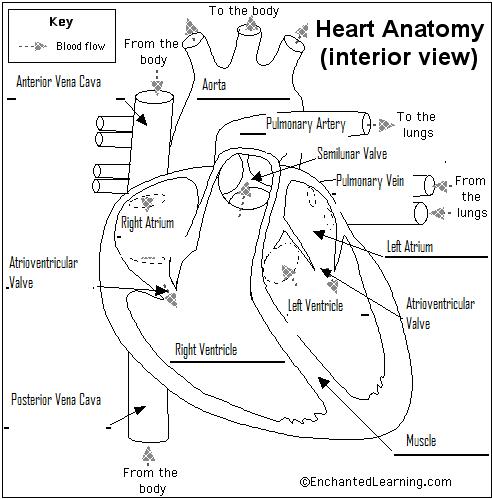
**MULTIPLE CHOICE QUESTIONS (15 marks)**

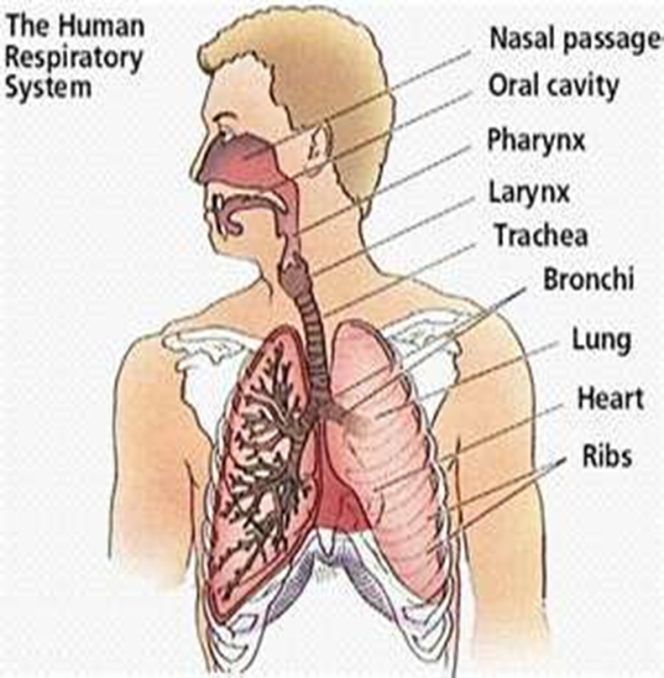
1. The circulatory system is comprised of:
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   2. The heart, vein, blood, lymphatic vessels
   3. The heart, veins, arteries, capillaries, blood
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2. Oxygenated blood coming from the lungs enters the heart through the \_\_\_\_\_, into the \_\_\_\_\_\_ then the \_\_\_\_\_\_\_ before being distributed to the rest of the body through the \_\_\_\_\_\_:
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   3. Muscle
   4. Capillaries
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   1. Blood pressure
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   2. Food and water dilute the gastric juices
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   2. maintain constant levels of nutrients in the blood
   3. kill bacteria in the food
   4. digest and absorb nutrients
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   1. digest food as it passes through the liver on the way to the large intestine
   2. monitor glucose levels in the blood
   3. convert by-products of protein digestion to urea
   4. aid in digestion by producing bile
5. Respiration actually is the process of:
   1. Sucking air into lungs
   2. Converting sugar into ATP by tissue cells
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   1. Oxygen is flowing from a low concentration inside the cell to a high concentration outside the cell
   2. Oxygen flows from higher concentration in the blood to the lower concentration in the body cell
   3. Carbon dioxide is absorbed from the red blood cells into the body cells.
   4. Carbon dioxide diffuses from low concentration outside the cell to the high concentration inside the cell.

DIAGRAMS

1. 
2. Label the following diagrams (13 marks)





**SHORT ANSWER QUESTIONS**

1. Some babies are born with a hole between their left and right ventricles. Explain how, if not surgically corrected, this hole would affect the oxygen content of the blood entering the body. (2 marks)

This hole would reduce the oxygen content by mixing oxygen-depleted blood from the right ventricle with the oxygen-rich blood of the left ventricle.

1. A student has placed the enzyme lipase in a test tube along with a solution of hydrochloric acid and a protein. Explain why digestion will or will not take place. (4 marks)

Digestion will not take place because although hydrochloric acid creates the necessary conditions for the digestion of proteins to take place (low pH for protease to work and slight denature of proteins), protease is needed to fully breakdown proteins. Lipase breaks down fats, not proteins. Furthermore, lipase works best at slightly higher pH’s. Hydrochloric acid is too acidic for lipase to work.

1. What is the difference between gas exchange and cell respiration? (4 marks)

Gas exchange occurs between red blood cells and the pulmonary mainly carbon dioxide and oxygen; whereas, cell respiration involves the full Kreb’s cycle and generate 3 molecules of ATP in the mitochondria.

1. Explain how sensory impulses are involved in changing the rhythm of breathing? (4 marks)

Nerve pathways carry sensory impulses from the nose, larynx, skin, and abdominal organs through the vagus nerve in the medulla oblongata.

**LONG ANSWER QUESTIONS**

1. Hundreds of studies have linked smoking with cardiovascular and lung disease. Antismoking and health groups have proposed that cigarette advertisement in all media should be banned entirely. What are some arguments in favour of this? What are some arguments in opposition of this? What is your position on such a ban and why? (6 marks)

Answers will vary:

2 marks for 2 points in favour of the ban

* + - Example: if advertising is banned, less people will buy these products. This will lead to less disease, and less strain on the health care system.

2 marks for 2 points in opposition of the ban

* + - Example: advertising should not be banned because people should have the freedom to choose whether they want to buy the product or not. Cigarette companies could lose customers and all their employees would be out of jobs.

2 marks for stating personal position on the ban and explaining why

1. Cirrhosis of the liver is a serious disease. As a Public Relations employee at the Canadian Liver Foundation, you have been asked to prepare a campaign to notify the public about this disease. In the space below, educate the public on:
   1. The environmental and lifestyle choices that can put someone at risk for this condition. (4 marks)

*Although students will write answers in paragraph form, the following points will be looked for in their answers and count as one mark each. Any four of these will grant full marks.*

* + - Chronic alcohol consumption
    - illegal drug use
    - obesity (especially fatty liver disease)
    - unmanaged diabetes
    - prolonged exposure to environmental toxins and infectious diseases (specifically, hepatitis)
  1. How Cirrhosis would affect a person’s health.(4 marks)

*Although students will write answers in paragraph form, the following points will be looked for in their answers and count as one mark each. Any four of these will grant full marks.*

* + - impairs liver function
    - fluid accumulation in the legs or abdomen
    - bleeding and bruising because they their blood does not clot properly, and jaundice due to insufficient levels of bile.
    - Toxins may accumulate in their blood which can impair mental function, personality and possibly lead to a coma.
    - Early signs of toxin accumulation in the brain may include neglect of personal appearance, unresponsiveness, forgetfulness, concentration problems or changes in sleeping habits.
    - Because the normal cleansing process is impaired by cirrhosis, drugs are not properly filtered resulting in an increased sensitivity to drugs and their side-effects.